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Helen A. Odar
Name of Applicant, Assignee or Registered Representative

Helen A Odar
Signature

Our Case No. 4865/49-1
Client Reference No. 1990023A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Lowell Bok et al.

Serial No.: 09/449,034

Filing Date: November 24, 1999

For: THREE RUN DISK BRAKE STACK AND METHOD OF ASSEMBLY

Examiner: M. Burch

Group Art Unit No.: 3613

REPLY BRIEF

Mail Stop Appeal Brief- Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This is the Reply Brief in response to the Examiner's Answer.

A personal appearance for presentation of oral argument is requested. The fee is being transmitted with the request herewith.

REPLY ARGUMENTS OF APPELLANT

The inventors have clearly described their invention.

The Examiner maintains that the applicants did not have possession of the claimed invention. The Examiner asserts that the claim language reads as if the end

plate, for example is made up of more that one disk and as if the wear faces have three different wear portions. Therefore, the Examiner rejected Claims 1-5 under 35 U.S.C.§ 112, first paragraph as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventors had possession of the claimed invention. Applicants respectfully disagree.

First of all, the claim language specifically states: "said brake disks, end plate and pressure plate, each comprising of disks with wear faces.." The specification clearly sets forth that the assembly is assembled with disks having three different thicknesses. The brake is assembled with "three different wear portion thicknesses which enables the thickest disks to go through three service runs prior to being replaced or refurbished, " and so forth. (page 5 of the specification). The specification further states that the end plate and pressure plate have only one wear face while the rotors and stators have two. (*Id.*)

Giving the words of the claims their ordinary meaning as reaffirmed by the description in the specification, the claims require a brake assembly wherein the end plate, pressure plate, and rotors and stators are each made from disks. Each of the disks, depending upon the type of disk, has a wear face which has a particular thickness. The result is a disk that is either thick, mid-thick, or thin. (page 11 of the specification.) This is clearly set forth on page 12 of the specification.

The claimed invention is not obvious.

Claims 1-5, 11, and 13-16 have been once again rejected under 35 USC §103(a) as being unpatentable over Canadian Patent CA-2004091 in view of Bok '895 et al. Applicants respectfully disagree. The combination of CA-2004091 with Bok '895 does not yield the claimed invention.

First, CA-2004091 does not show explicitly or implicitly, any disk with a three wear portions on a single wear face. Second, CA-2004091 does not provide replacing the fully worn disks with a disk of a first, second or third thickness as claimed by Applicants. Third, there is no description of having a brake assembly where there are three thicknesses of rotors in the assembly itself. Moreover, CA-2004091 requires that the worn disk is replaced by new disks having an initial thickness identical to that of the

initial disks in the corresponding positions so that the initial arrangement is reproduced. (see page 6 of translation).

The addition of Bok does not remedy these deficiencies of CA-2004091. Bok does not teach the use of an end plate and pressure plate having three different thicknesses. Rather Bok teaches a disk brake in which the brake is assembled with the thickness of the available wear portions of a first group of disks being different from the thickness of the available wear portions of a second group of disks. After a predetermined number of brake applications, the first group of disks is replaced by a third group of disks. As described in greater detail in Bok, the disks used as end plate and pressure plate can only be used as such and not in the stack between the end plate and pressure plate. Therefore, after a service run, if the end plate and the pressure plate are fully worn, they must be replaced with another end plate or pressure plate; they cannot be replaced with a disk from the brake stack. Although Bok states that "other modifications may be provided in which the thicknesses of the available wear potions of the brake disk are varied to obtain the advantages provided by the above described embodiments," nowhere in the '895 reference does Bok describe directly or indirectly, disks having three separate thicknesses. Other than this vague passage that other modifications are possible, there is nothing in Bok that the Examiner can point to or show which describes this concept of a three run disk brake stack as described and claimed by the Applicants.

Consequently, the combination of CA-2004091 with Bok would not render obvious applicants claimed invention where the pressure plate, end plate, stators and rotors are of three different thicknesses. Bok '895 does not teach use of any heat sink stack containing disks of three different wear portion thickness in a given heat sink assembly. Bok '895 only teaches the presence of two different wear portion thicknesses.

A. <u>The References are Improperly Combined</u>

The Examiner's combination of references is erroneous. One of ordinary skill in the art would not combine the references as suggested by the Examiner. The Examiner has improperly used the applicant's invention as an instruction book to reconstruct the claimed invention. This is improper as a matter of law.

There is absolutely no suggestion in either CA-2004091 or Bok to suggest the combination of these references. The Examiner has failed to point to any such suggestion in these references. Rather the Examiner is using the applicant's specification as a road map to arrive at her improper conclusions.

Furthermore, one of ordinary skill in the art would not combine the teachings of CA-2004091 with Bok as suggested by the Examiner. The Examiner has dismissed the applicants arguments as irrelevant. However, why would one add a pressure plate and an end plate to CA-2004091 to provide increased braking capacity as the Examiner alleges when the entire brake design would be destroyed?

The brake design the CA-2004091 reference is different from the conventional brake design used in the brake assembly of Bok. The design of CA-200491 utilizes as torque tube with a flared end (4) with brake disks, having wear faces on both sides of the disks as clearly shown in FIGS. 1 and 2. Because of this design, there is no end plate or pressure plate having only one wear surface in the configuration as in the Bok reference. When the stators and rotors have arrived at their minimal thickness according to the teaching of CA-2004091, they are moved sideways toward the flared end of the torque tube. Why would one add a pressure plate and an end plate to this structure which could not be moved sideways in the assembly?

In most aircraft brake designs, as well as that of Bok, neither the pressure plate nor end plate are able to be positioned or used in other than a single location in the brake disk stack; rather the pressure plate and end plate are specially configured to fit their respective complementary parts due to very different functions in the brake stack. Because of the different design of the brake assembly itself. CA-200491 can only be applied to a brake whose design permits the same disk to be used in the position and function of a pressure plate, center disks (i.e., rotors and stators) and an end plate.

Furthermore, the CA-2004091 reference specifically states that the invention provides for a brake with multiple carbon disks in which each series of carbon disks comprises at least one first group of disks close to the maneuvering device having a first thickness and at least one second group of disks far from the maneuvering device having a second thickness less than the first thickness. CA-2004091 then proceeds to describe how the disks used in the first group at the time of the first mounting can thus be used in the second group at the time of the subsequent mounting. This is further

reaffirmed on page 5 of CA-2004091 in which it is stated, "[u]nder these circumstances disks S4, S5, R3 and R4 which have arrived at the minimum thickness, are eliminated, and the other disks are moved ***sideways*** toward the retaining plate 4." (emphasis supplied). The Bok disks in the first group when worn are replaced by new disks, and not moved ***sideways*** as are the disks of CA-2004091. This is a further reason why one would not combine the teaching of CA-2004091 with the teaching of Bok.

B. A reference cannot modify itself.

The Examiner as part of the rejection has proceeded as one ground to modify CA-2004091 with itself. (See page 4-5 of Office Action of September 13, 2002). The Examiner, even in the Examiner's Answer has failed to cite any legal support for this new type of obviousness rejection. Section 706.02(j) f the MPEP states a single reference may be used. However, there is no statement in this section that a reference itself can be used as a base reference as well as the modifying reference in an obviousness rejection as the Examiner did in the Office Action of September 13, 2002. If such a rejection is to be maintained, then legal support for such must be provided.

CONCLUSION

Claims 1-5, 11 and 13-16 are patentably distinguished over the combination of Canadian Patent CA-2004091 in view of Bok '895. This obviousness rejection is improper because there is no motivation to combine the references as suggested by the Examiner. However, even if combined, the references do not teach Appellant's claimed invention of a three run brake assembly wherein each of the end plate, pressure plate, rotors or stators can be one of three different configurations.

In view of the foregoing discussion, it is respectfully submitted that the §103 rejection is in error and that the final rejection should be withdrawn. Furthermore Applicants request a notice of allowability and grant of a patent protecting their invention.

Respectfully submitted,

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May 20, 2003

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